"Exposure to flame retardants and its health effects in pregnant women and children"

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Polybrominated diphenylethers (PBDEs) are fire retardants used in a number of consumer products. California may contain the most highly exposed population due to strict flammability standards. We aimed to determine in utero/childhood exposure to PBDEs and whether pre-/postnatal exposure was associated with maternal/neonatal TSH level, fertility, fetal growth/length of gestation, neurodevelopment, growth and metabolic syndrome.

We enrolled 600 pregnant women and offspring from the CHAMACOS study, a longitudinal birth cohort. Women who were $\geq$18 years of age, <20 weeks gestation, English or Spanish speaking, Medi-Cal eligible and delivering at the county hospital were eligible. Ten PBDE congeners were analyzed in maternal serum at 26 weeks gestation, delivery and in children at 7 years.

Total PBDE serum concentrations in the study were higher than levels reported by previous US studies but substantially higher than levels seen in Europe and Japan. CHAMACOS children presented the highest levels compared to their mothers and all US comparisons. High maternal levels were associated with reduced fertility, reduced birthweight after adjusting for gestational age and decreased maternal TSH. Maternal levels were not associated with neonatal TSH and child neurodevelopment at 6, 12 and 24 months. Child PBDE levels were associated with attention/activity deficits at 5 and 7 years. In summary, PBDE exposure may be related to infertility, hyperthyroidism in pregnancy, lower birthweight for gestation, and poorer attention and hyperactivity in children.

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